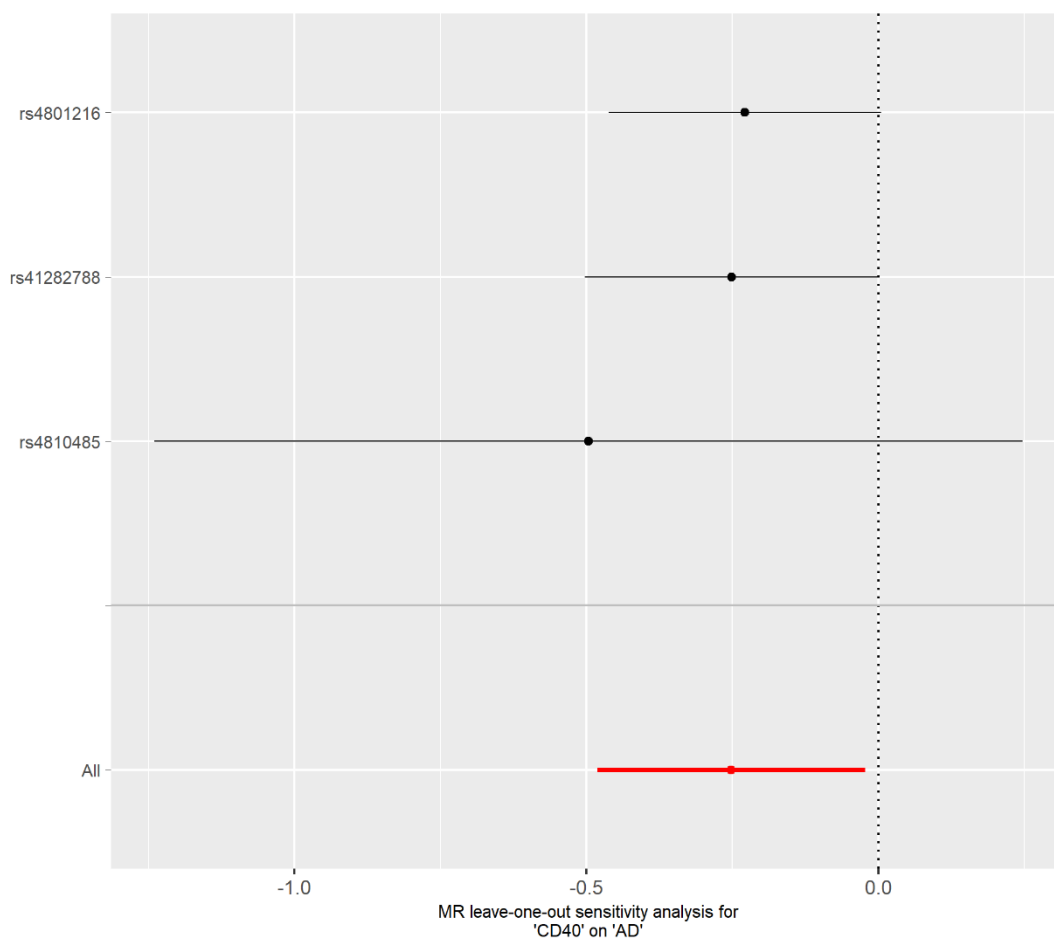


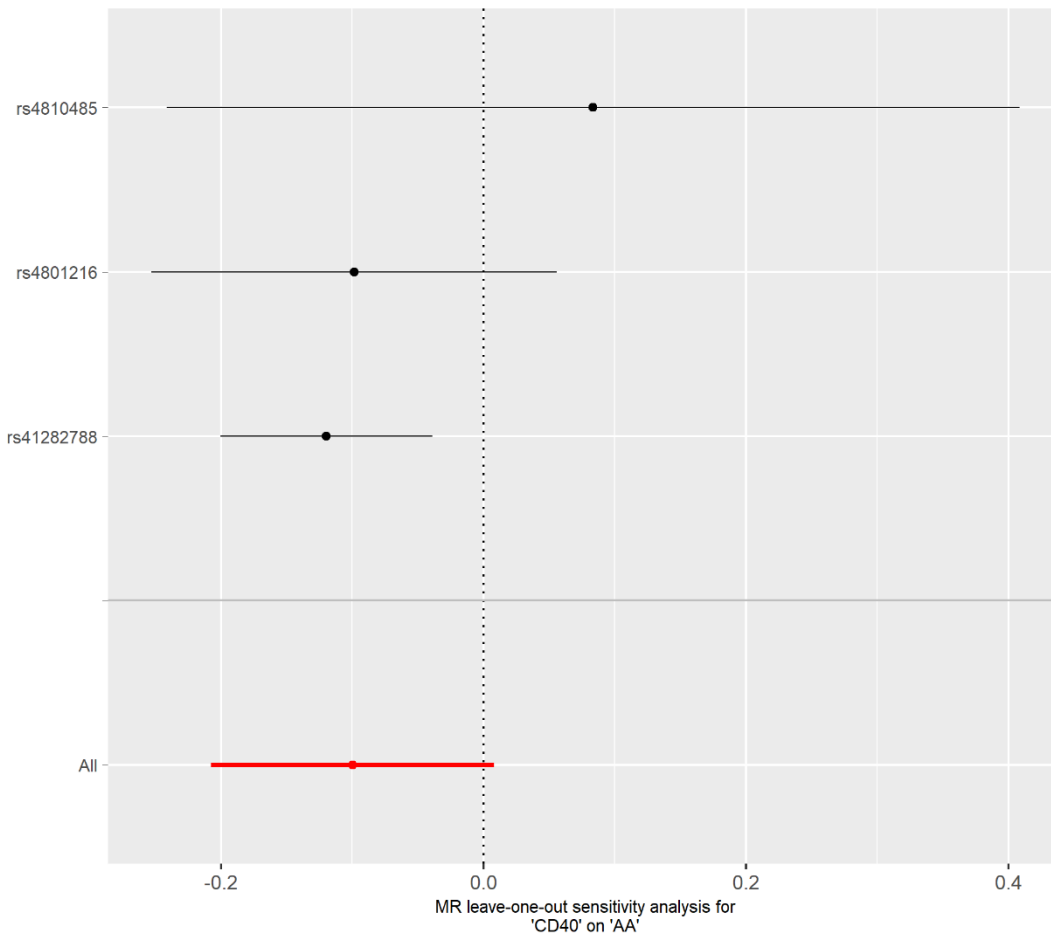
## *Supplementary Material*

### Supplementary Figures and Tables

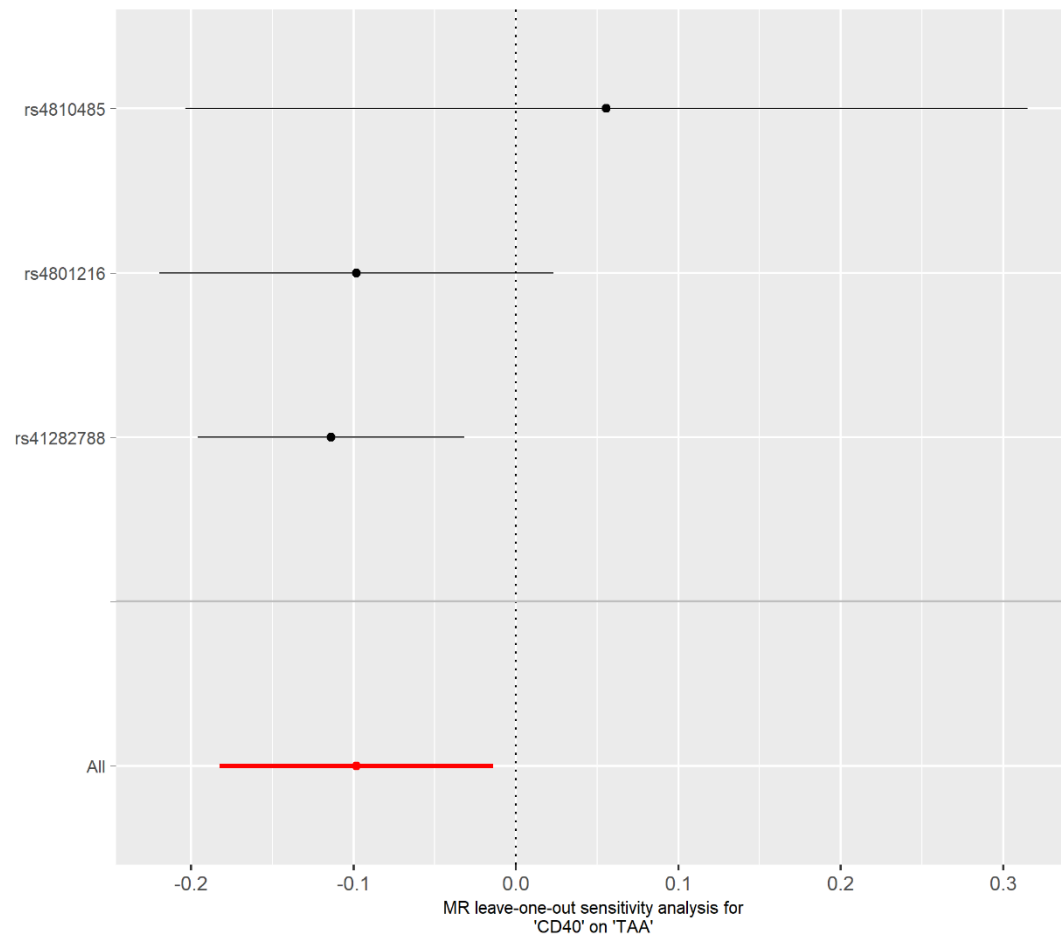
#### Supplementary Figures



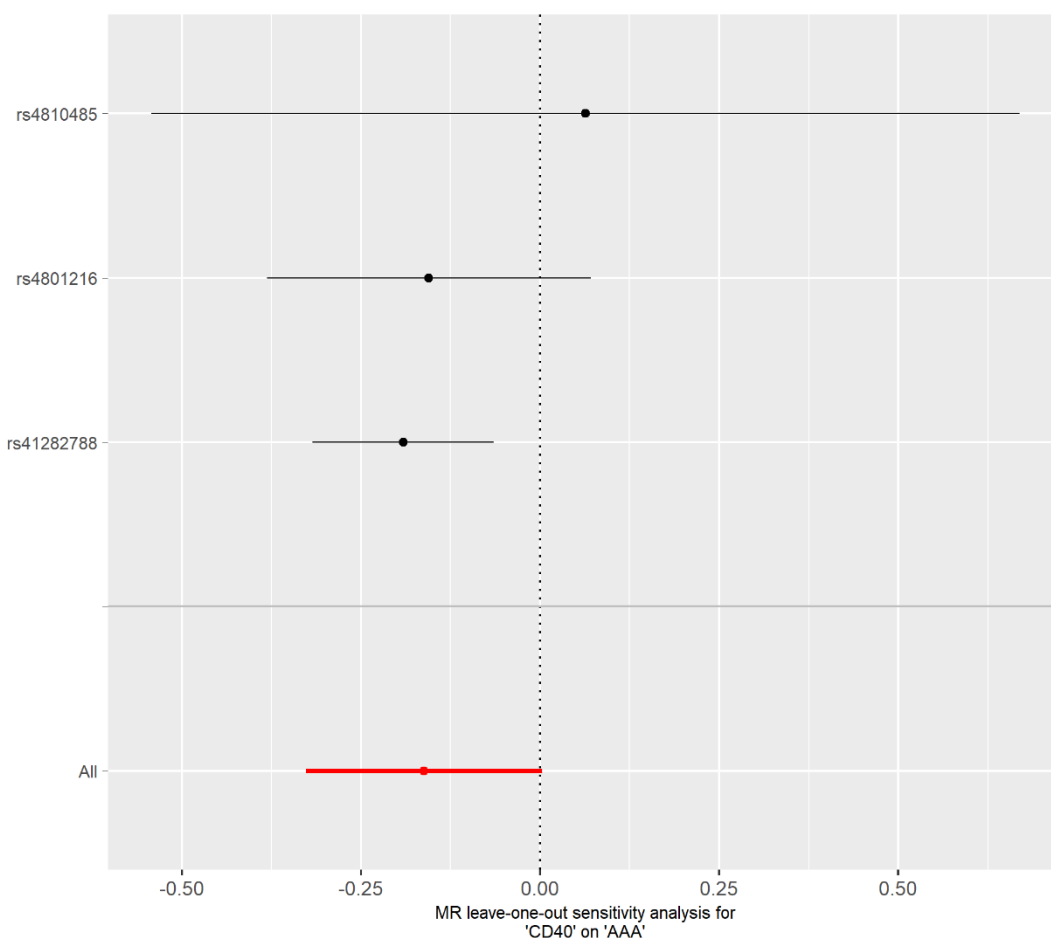
**Supplemental Figure 1. Leave-one-out sensitivity analysis of genetic proxied CD40 levels on the risk of AD.** AD, aortic dissection; MR, Mendelian randomization.



**Supplemental Figure 2. Leave-one-out sensitivity analysis of genetic proxied CD40 levels on the risk of AA.** AA, aortic aneurysm; MR, Mendelian randomization.



**Supplemental Figure 3. Leave-one-out sensitivity analysis of genetic proxied CD40 levels on the risk of TAA.** TAA, thoracic aortic aneurysm; MR, Mendelian randomization.



**Supplemental Figure 4** Leave-one-out sensitivity analysis of genetic proxied CD40 levels on the risk of AAA. AAA, abdominal aortic aneurysm; MR, Mendelian randomization.

### Supplementary Tables

**Supplementary Table 1.** Pleiotropy analyses based on MR-Egger regression of the two-sample MR analyses of CD40 and aortic diseases

Aortic diseases	Intercept	Se	P value
AD	-0.075	0.071	0.482
AA	-0.006	0.047	0.923
TAA	-0.001	0.037	0.982

AAA	-0.024	0.069	0.790
-----	--------	-------	-------

AA, aortic aneurysm; TAA, thoracic aortic aneurysm; AAA, abdominal aortic aneurysm.

**Supplementary Table 2. Heterogeneity analyses based on Cochrane's Q test for the two-sample MR analyses of CD40 and aortic diseases**

Aortic diseases	Cochrane's Q	Qdf	H statistic	I <sup>2</sup>	P value
AD	1.129	2	0.751	-0.772	0.569
AA	3.814	2	1.381	0.476	0.149
TAA	2.253	2	1.061	0.112	0.324
AAA	3.622	2	1.346	0.448	0.163

AA, aortic aneurysm; TAA, thoracic aortic aneurysm; AAA, abdominal aortic aneurysm.